REMARKS/ARGUMENTS

The Examiner found that claims 6, 16, and 30 would be allowed if rewritten in independent form. (Second Office Action, pg. 8) Applicants submit that these claims are patentable over the cited art in their current form because the base claims 1, 11, and 25 from which they depend are patentable over the cited art for the reasons discussed below.

1. Claims 1-4, 8-14, 17-28, and 32-34 are Patentable Over the Cited Art

The Examiner rejected claims 1-4, 8-14, 17-28, and 32-34 as obvious (35 U.S.C. §103(a)) by Crayford (U.S. Patent No. 5,610,903) in view of Manoharan (U.S. Patent No. 6,952,395). Applicants traverse.

Independent claims 1, 11, 23, and 25 require establishing a connection with a link partner at a common transmission speed; setting a duplex mode used for transmissions to a first duplex mode; monitoring a transmission error rate with the link partner; changing the duplex mode to a second duplex mode in response to detecting that the transmission error rate exceeds a threshold.

The Examiner recognized that Crayford fails to teach changing a first duplex mode to a second duplex mode in response to detecting that a transmission error rate exceeds a threshold. The Examiner then cited col. 13, lines 36-40 of Manoharan as addressing the deficiency of Crayford. (Second Office Action, pg. 2) Applicants traverse.

The cited col. 13 of Manoharan discusses detection of an interruption or fault in the flow of traffic, which may include a break in the fibre, loss of signal (LOS), loss of framing (LOF), or where the line or path bit error rate (BER) exceeds a threshold value. Manoharan mentions that when a fault is detected, a protection switching signal (PSS) is generated by the nodes detecting the fault. The PSS is transmitted along the management control flow (MCF) of the affected path protection group (PPG) to the protection switching entities, which switch receipt of the affected traffic or both the transmission and receipt of the affected traffic, from the affected PPG to the associated protect PGG to restore signal continuity. (Manoharan, col. 13, lines 33-50).

Thus, the cited Manoharan mentions that in response to detecting an error, including an error exceeding a threshold, a signal is generated to switch the path group being used to a protect PPG. Nowhere does the cited Manoharan teach or suggest that in response to detecting an error exceeding a threshold, changing the duplex mode to a second duplex mode. Instead, the cited

Manoharan mentions switching path groups in response to detecting the error exceeding the error rate.

The cited col. 5, lines 25-37 and col. 7, lines 25-28 of Crayford are similarly deficient, as the Examiner recognized. The cited col. 5 discusses how to send a test pattern to indicate a transmission mode to allow the first and second stations to negotiate a proper duplex mode. The cited col. 7 mentions that a medium attached unit (MAU) sends a signal quality error (SQE) test message.

Thus, if one were to combine Crayford and Manoharan as the Examiner suggests, the resulting combination is a system that sends test patterns to indicate a transmission mode to negotiate a duplex mode and sends a signal quality error (as mentioned in the cited Crayford) along with the capability to switch path groups if the error rate is detected to exceed a threshold (as mentioned in the cited Manoharan). There is no teaching in this proposed combination of performing the specific claimed operations -- changing the first duplex mode to a second duplex mode -- in response to detecting that the transmission error rate exceeds a threshold. The combination of the cited references does not teach or suggest the particular claimed operation of changing the duplex mode if the detected error rate exceeds a threshold.

Accordingly, claims 1, 11, 23, and 25 are patentable over the cited art because the cited Crayford does not disclose all the claim requirements.

Claims 2-4, 8-10, 12-14, 17-22, 24, 26-28, and 32-34 are patentable over the cited art because they depend from one of base claims 1, 11, 23, and 25, which are patentable over the cited art for the reasons discussed above.

Claims 2, 12, 24, and 26 depend from claims 1, 11, 23, and 25, respectively, which require that the duplex mode is changed without terminating the connection with the link partner.

The Examiner cited lines 6-7 of the Abstract of Crayford as disclosing this claim requirement. (Second Office Action, pg. 2) Applicants traverse.

The cited Abstract mentions that the cited operation of providing a specified pattern of link test pulses to provide for the indication of enhanced capabilities is particularly useful for determining whether a particular station is in full duplex or half duplex mode without affecting overall network performance.

Nowhere does the cited Abstract disclose or mention changing the duplex mode between link partners without terminating the connection. Instead, the cited Abstract mentions that a

benefit of its technique for providing test pulses so stations may determine a mode at which to communication allows determination of the mode without affecting overall network performance. This does not disclose that two stations change their duplex mode when detecting an error without terminating their connection. Instead, the cited Abstract discusses how to determine whether a station is in full or half duplex mode, not the claim requirements concerning changing the duplex mode without terminating a specific connection.

Accordingly, claims 2, 12, 24, and 26 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Crayford.

Claims 9, 19, and 33 depend from claims 1, 11, and 25, respectively, and further require that the monitored transmission error rate comprises a bit error ratio of a number of bits received in error to a total number of bits received within a predefined time window.

The Examiner cited col. 7, lines 25-28 of Crayford as disclosing the additional requirements of these claims. (Second Office Action, 3) Applicants traverse.

The cited col. 7 mentions that a medium attached unit (MAU) sends a signal quality error (SQE) test message. This requires the MAU to test as much of its collision detection logic. Although the cited col. 7 discusses a unit sending a signal quality error test message, this does not disclose monitoring for a transmission error rate comprising a bit error ratio of a number of bits received in error to total received within a time window. The cited col. 7 nowhere discloses or mentions monitoring for a bit error ratio as claimed, and instead the cited col. 7 discusses a unit sending a signal quality error message.

Accordingly, claims 9, 19, and 33 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Crayford.

Claims 10, 20, and 34 depend from claims 1, 11, and 25, respectively, and further require continuing to monitor the transmission error rate with the link partner after changing the duplex mode; and changing the duplex mode from one of the first to second duplex mode or from the second to first duplex mode in response to detecting that the transmission error rate exceeds the threshold.

The Examiner cited the above discussed cols. 5 and 7 of Crayford as disclosing the additional requirements of these claims. (Second Office Action, pg. 3) Applicants submit that

these claims provide additional grounds of patentability over the cited art because they recite performing another iteration of monitoring and changing the duplex mode after changing the duplex mode. Because the cited cols. 5 and 7 do not disclose one iteration of these operations as discussed with respect to claims 1,11, and 25, these cited columns consequentially also fail to disclose an additional iteration of these operations as claimed.

Accordingly, claims 10, 20, and 34 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not disclosed in the cited Crayford.

2. Claims 5, 7, 15, 17, 29, and 31 are Patentable Over the Cited Art

The Examiner rejected claims 5, 7, 15, 17, 29, and 31 as obvious (35 U.S.C. §103(a) over Crayford in view of Manoharan and further in view of Yang (U.S. Patent No. 5,414,700). Applicants traverse.

These claims are patentable over the cited art because they depend from one of claims 1, 11, and 25, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide additional grounds of patentability over the cited art.

Claims 5, 15, and 29 depend from claims 1, 11, and 25, respectively, and further require that the duplex mode is changed to the second duplex mode by setting a flag in a hardware register to cause the hardware to transmit in the second duplex mode while maintaining the connection with the link partner.

The Examiner cited col. 13, lines 14-19 of Yang as teaching these additional claim requirements. (Second Office Action, pgs. 6-7) Applicants traverse.

The cited col. 13 mentions an EnteringFDX binary flag indicating a transition into full duplex operation starting on receipt of an FDX ack frame. Although the cited col. 13 mentions a flag providing information on transition to full duplex mode, this does not teach setting a flag to cause hardware to change transmitting to second duplex mode while maintaining the connection. The Examiner has not cited where Yang teaches changing the duplex mode while the connection with the link partner is maintained.

The Examiner further cited col. 12, lines 46-57 of Yang. (Second Office Action, pg. 7) This cited col. 12 discusses variables used in the node test and full duplex control protocol, such as a variable indicating whether full duplex operation is enabled and the status of full duplex

operation, a variable that determines the MAC's operational mode, and upstream and downstream neighbor addresses. Although variables related to full duplex mode are discussed, the cited col. 12 does not teach setting a flag to cause hardware to change transmitting to a second duplex mode while maintaining the connection. Instead, the cited variables concern indicating a duplex mode.

Accordingly, claims 5, 15, and 29 provide additional grounds of patentability over the cited art because the additional requirements of these claims are not taught or suggested in the cited Crayford and Yang.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-34 are patentable. Should any additional fees be required beyond those paid, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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